

wherein the step of supplying said hydrogen gas is discontinued with a start of the step of supplying said reactive gas and throughout the forming of said semiconductor film.

24. (Amended) A film forming method comprising the steps of:

forming an under film on a substrate;

supplying hydrogen gas into a chamber;

supplying radio frequency energy in said chamber to generate plasma from said hydrogen gas by radio frequency discharge;

supplying a reactive gas into said chamber at a same flow rate as supplying said hydrogen gas; and

forming a semiconductor film on said under film in said chamber by decomposing said reactive gas using said radio frequency energy,

wherein the step of supplying said hydrogen gas is discontinued with a start of the step of supplying said reactive gas and throughout the step of forming of said semiconductor film.

25. (Amended) A film forming method comprising the steps of:

forming a semiconductor film over a substrate in a chamber by decomposing a reactive gas using radio frequency energy supplied in said chamber;

supplying hydrogen gas into said chamber at a same flow rate as supplying said reactive gas; and

supplying said radio frequency energy to said hydrogen gas to generate plasma from said hydrogen gas in said chamber by radio frequency discharge,

wherein said reactive gas is supplied into said chamber during the step of forming of said semiconductor film before the step of supplying said hydrogen gas, and the step of supplying said hydrogen gas is started with discontinuing a supply of said reactive gas.

26. (Amended) A film forming method comprising the steps of:
supplying a discharge gas into a chamber;
supplying radio frequency energy in said chamber to generate plasma from said discharge gas by radio frequency discharge;
supplying a reactive gas into said chamber at a same flow rate as supplying said discharge gas; and
forming a semiconductor film over a substrate in said chamber by decomposing said reactive gas using said radio frequency energy,
wherein the step of supplying said discharge gas is discontinued with a start of the step of supplying said reactive gas and throughout the step of forming of said semiconductor film, and
wherein said discharge gas does not contribute to film formation.

27. (Amended) A film forming method comprising the steps of:
forming a semiconductor film over a substrate in a chamber by decomposing a reactive gas using radio frequency energy supplied in said chamber;
supplying a discharge gas into said chamber at a same flow rate as supplying said reactive gas; and
supplying said radio frequency energy to said discharge gas to generate plasma from said discharge gas in said chamber by radio frequency discharge,
wherein said reactive gas is supplied into said chamber during the step of forming of said semiconductor film before the step of supplying a discharge gas, and the step of

supplying said discharge gas is started with discontinuing supplying said reactive gas, and

wherein said discharge gas does not contribute to film formation.

28. (Amended) A film forming method for forming a plurality of different films as a multilayer in a multichamber apparatus comprising a plurality of chambers coupled to each other, said method comprising the steps of:

supplying hydrogen gas into one of said chambers;

supplying radio frequency energy in said one of said chambers to generate plasma from said hydrogen gas by radio frequency discharge;

supplying a reactive gas into said one of said chambers at a same flow rate as supplying said hydrogen gas; and

forming a semiconductor film over a substrate as one of said different films in said one of said chambers by decomposing said reactive gas using said radio frequency energy therein,

wherein the step of supplying said hydrogen gas is discontinued with a start of the step of supplying said reactive gas and throughout the step of forming of said semiconductor film, and wherein each of said chambers forms at least one of said plurality of different films.

29. (Amended) A film forming method for forming a plurality of different films as a multilayer in a multichamber apparatus comprising a plurality of chambers coupled to each other, said method comprising the steps of:

forming a semiconductor film over a substrate as one of said different films in one of said chambers by decomposing a reactive gas using radio frequency energy supplied in said one of said chambers;

supplying hydrogen gas into said one of said chambers at a same flow rate as supplying said reactive gas; and

supplying said radio frequency energy to said hydrogen gas to generate plasma from said hydrogen gas in said one of said chambers by radio frequency discharge,

wherein said reactive gas is supplied into said chamber during the step of forming of said semiconductor film before the step of supplying said hydrogen gas, and the step of supplying said hydrogen gas is started with discontinuing the supplying of said reactive gas, and wherein each of said chambers forms at least one of said plurality of different films.

31. (Amended) A method according to claim 23 wherein said semiconductor film is crystallized by irradiating a laser light, and said crystallized semiconductor film is used for fabricating a thin film transistor.

32. (Amended) A method according to claim 24 wherein said semiconductor film is crystallized by irradiating a laser light, and said crystallized semiconductor film is used for fabricating a thin film transistor.

33. (Amended) A method according to claim 25 wherein said semiconductor film is crystallized by irradiating a laser light, and said crystallized semiconductor film is used for fabricating a thin film transistor.

34. (Amended) A method according to claim 26 wherein said semiconductor film is crystallized by irradiating a laser light, and said crystallized semiconductor film is used for fabricating a thin film transistor.

35. (Amended) A method according to claim 27 wherein said semiconductor film is crystallized by irradiating a laser light, and said crystallized semiconductor film is used for fabricating a thin film transistor.

36. (Amended) A method according to claim 28 wherein said semiconductor film is crystallized by irradiating a laser light, and said crystallized semiconductor film is used for fabricating a thin film transistor.

37. (Amended) A method according to claim 29 wherein said semiconductor film is crystallized by irradiating a laser light, and said crystallized semiconductor film is used for fabricating a thin film transistor.

45. (Amended) A method according to claim 23 wherein a period of time from a start of said radio frequency discharge to said start of the supply of said reactive gas is 10 seconds.

46. (Amended) A method according to claim 24 wherein a period of time from a start of said radio frequency discharge to said start of the supply of said reactive gas is 10 seconds.

47. (Amended) A method according to claim 28 wherein a period of time from a start of said radio frequency discharge to said start of the supply of said reactive gas is 10 seconds.

48. (Amended) A method according to claim 23 wherein a time chart in said film forming is $10t \geq T$ where t is a largest period of time selected among periods of time

corresponding to an unstable discharge state at a start of discharge, and where T is a period of time of the forming of said semiconductor film.

49. (Amended) A method according to claim 24 wherein a time chart in said film forming is $10t \geq T$ where t is a largest period of time selected among periods of time corresponding to an unstable discharge state at a start of discharge, and where T is a period of time of the forming of said semiconductor film.

50. (Amended) A method according to claim 26 wherein a time chart in said film forming is $10t \geq T$ where t is a largest period of time selected among periods of time corresponding to an unstable discharge state at a start of discharge, and where T is a period of time of the forming of said semiconductor film.

58. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:

supplying a discharge gas into a chamber;

supplying radio frequency energy in said chamber to generate plasma from said discharge as by radio frequency discharge;

supplying a reactive gas into said chamber at a same flow rate as supplying said discharge gas; and

forming a gate insulating film over an insulating substrate in said chamber by decomposing said reactive gas using said radio frequency energy,

wherein said discharge gas is not supplied during the step of supplying said reactive gas and throughout the forming of said gate insulating film.

60. (Amended) A method according to claim 58 wherein said gate insulating film is silicon oxide.

61. (Amended) A method according to claim 58 wherein said discharge gas is hydrogen.

62. (Amended) A method according to claim 58 wherein said reactive gas is silane.

64. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:

forming a gate insulating film over an insulating substrate in a chamber by decomposing a reactive gas using radio frequency energy supplied in said chamber;

supplying a discharge gas into said chamber; and

supplying said radio frequency energy to said discharge gas to generate plasma from said discharge gas in said chamber by radio frequency discharge at a same flow rate as supplying said reactive gas,

wherein said reactive gas is supplied into said chamber during the step of forming of said gate insulating film before the step of supplying said discharge gas, and said reactive gas is not supplied during the step of supplying said discharge gas.

66. (Amended) A method according to claim 64 wherein said gate insulating film is silicon oxide.

67. (Amended) A method according to claim 64 wherein said discharge gas is hydrogen.

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68. (Amended) A method according to claim 64 wherein said reactive gas is silane.

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70. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:
supplying a discharge gas into a chamber;
supplying radio frequency energy in said chamber to generate plasma from said discharge gas by radio frequency discharge;
supplying a reactive gas into said chamber at a same flow rate as supplying said discharge gas; and
forming a semiconductor film over an insulating substrate in said chamber by decomposing said reactive gas using said radio frequency energy,
wherein said discharge gas is not supplied during the step of supplying said reactive gas and throughout the forming of said semiconductor film.

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72. (Amended) A method according to claim 70 wherein said discharge gas is hydrogen.

73. (Amended) A method according to claim 70 wherein said reactive gas is silane.

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75. (Amended) A method according to claim 70 wherein a thickness of said semiconductor film is 50 nm or less.

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76. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:

forming a semiconductor film over an insulating substrate in a chamber by decomposing a reactive gas using radio frequency energy supplied in said chamber;

supplying a discharge gas into said chamber at a same flow rate as supplying said reactive gas; and

supplying said radio frequency energy to said discharge gas to generate plasma from said discharge gas in said chamber by radio frequency discharge,

wherein said reactive gas is supplied into said chamber during the step of forming of said semiconductor film before the step of supplying said discharge gas, and said reactive gas is not supplied during the step of supplying said discharge gas.

78. (Amended) A method according to claim 76 wherein said discharge gas is hydrogen.

79. (Amended) A method according to claim 76 wherein said reactive gas is silane.

81. (Amended) A method according to claim 76 wherein a thickness of said semiconductor film is 50 nm or less.

82. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:

supplying a discharge gas into a chamber;

supplying radio frequency energy in said chamber to generate plasma from said discharge gas by radio frequency discharge;

supplying a reactive gas into said chamber at a same flow rate as supplying said discharge gas; and

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forming an under film on an insulating substrate in said chamber by decomposing said reactive gas using said radio frequency energy,

wherein said discharge gas is not supplied during the step of supplying said reactive gas and throughout the forming of said under film.

83. (Amended) A method according to claim 82 wherein said under film is silicon oxide.

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84. (Amended) A method according to claim 82 wherein said discharge gas is hydrogen.

85. (Amended) A method according to claim 82 wherein said reactive gas is silane.

87. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:

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forming an under film on an insulating substrate in a chamber by decomposing a reactive gas using radio frequency energy supplied in said chamber;

supplying a discharge gas into said chamber at a same flow rate as supplying said reactive gas; and

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supplying said radio frequency energy to said discharge gas to generate plasma from said discharge gas in said chamber by radio frequency discharge,

wherein said reactive gas is supplied into said chamber during the step of forming of said under film before the step of supplying said discharge gas, and said reactive gas is not supplied during the step of supplying said discharge gas.

88. (Amended) A method according to claim 87 wherein said under film is silicon oxide.

89. (Amended) A method according to claim 87 wherein said discharge gas is hydrogen.

90. (Amended) A method according to claim 87 wherein said reactive gas is silane.

92. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:

supplying a first discharge gas into a first chamber;

supplying first radio frequency energy in said first chamber to generate plasma from said first discharge gas by first radio frequency discharge;

supplying a first reactive gas into said first chamber at a same flow rate as supplying said first discharge gas; and

forming a semiconductor film over an insulating substrate in said first chamber by decomposing said first reactive gas using said first radio frequency energy,

supplying a second discharge gas into a second chamber;

supplying second radio frequency energy in said second chamber to generate plasma from said second discharge gas by second radio frequency discharge;

supplying a second reactive gas into said second chamber at a same flow rate as supplying said second discharge gas; and

forming a gate insulating film adjacent to said semiconductor film in said second chamber by decomposing said second reactive gas using said second radio frequency energy,

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wherein said first and said second discharge gases are not supplied during the step of supplying said first and said second reactive gases and throughout the forming of said semiconductor film and said gate insulating film.

94. (Amended) A method according to claim 92 wherein said first and said second discharge gases are hydrogen.

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95. (Amended) A method according to claim 92 wherein said first and said second reactive gases are silane.

96. (Amended) A method according to claim 92 wherein a period of time from the start of said first or said second radio frequency discharge to the start of the supply of said first or said second reactive gas is 10 seconds.

97. (Amended) A method according to claim 92 wherein a thickness of said semiconductor film is 50 nm or less.

98. (Amended) A film forming method for fabricating a thin film transistor comprising the steps of:

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forming a semiconductor film over an insulating substrate in a first chamber by decomposing a first reactive gas using first radio frequency energy supplied in said first chamber;

supplying a first discharge gas into said first chamber at a same flow rate as supplying said first reactive gas; and

supplying said first radio frequency energy to said first discharge gas to generate plasma from said first discharge gas in said first chamber by first radio frequency discharge,

forming a gate insulating film adjacent to said semiconductor film in a second chamber by decomposing a second reactive gas using second radio frequency energy supplied in said second chamber;

supplying a second discharge gas into said second chamber at a same flow rate as supplying said second reactive gas; and

supplying said second radio frequency energy to said second discharge gas to generate plasma from said second discharge gas in said second chamber by second radio frequency discharge,

wherein said first and said second reactive gases are supplied into said first and said second chambers during the step of forming of said semiconductor film and said gate insulating film before the step of supplying said first and said second discharge gases, and said first and said second reactive gases are not supplied during the step of supplying said first and said second discharge gases.

100. (Amended) A method according to claim 98 wherein said first and said second discharge gases are hydrogen.

101. (Amended) A method according to claim 98 wherein said first and said second reactive gases are silane.

102. (Amended) A method according to claim 98 wherein said first or said second radio frequency discharge is continued for 15 seconds after supplying said first or said second discharge gas.

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103. (Amended) A method according to claim 98 wherein a thickness of said semiconductor film is 50 nm or less.

107. (Amended) A method according to claim 26 wherein said flow rate of said discharge gas is 100 sccm.

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108. (Amended) A method according to claim 27 wherein said flow rate of said discharge gas

Please add new claims 119-129 as follows.

--119. A method according to claim 23 wherein said semiconductor film is amorphous silicon.

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120. A method according to claim 24 wherein said semiconductor film is amorphous silicon.

121. A method according to claim 25 wherein said semiconductor film is amorphous silicon.

122. A method according to claim 26 wherein said semiconductor film is amorphous silicon.

123. A method according to claim 27 wherein said semiconductor film is amorphous silicon.

124. A method according to claim 28 wherein said semiconductor film is amorphous silicon.

125. A method according to claim 29 wherein said semiconductor film is amorphous silicon.

126. A method according to claim 70 wherein said semiconductor film is amorphous silicon.

127. A method according to claim 76 wherein said semiconductor film is amorphous silicon.

128. A method according to claim 92 wherein said semiconductor film is amorphous silicon.

129. A method according to claim 98 wherein said semiconductor film is amorphous silicon.--

REMARKS

Applicant wishes to thank the Examiner for the very thorough consideration given the present application. The Office Action of **February 15, 2000**, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for a One (1) Month Extension of Time* that extends the shortened statutory period for response to **June 15, 2001**. Accordingly, Applicant respectfully submits that this response is timely filed.

Claims 23-29 and 31-118 were pending in the present application prior to the aforementioned amendment. Due to the above actions, claims 23-29, 31-37, 45-50, 58,